

What is claimed is:

1. A generating device comprising:

a magneto generator having a magnet rotor, and a stator having an m-phase armature coil (m is an integer equal to or more than 1) wound
5 around an armature core with a magnetic pole portion facing a magnetic pole of said magnet rotor;

an AC/DC conversion circuit having an AC/DC converter that converts an m-phase AC output voltage obtained from said magneto generator into a DC voltage to apply the DC voltage to voltage accumulation means, and an
10 inverter that converts a voltage across said voltage accumulation means into an m-phase AC voltage to apply the AC voltage to said armature coil; and

a controller that controls said inverter so as to apply an AC control voltage having the same frequency as an induced voltage of said armature coil to said armature coil from said voltage accumulation means via said
15 inverter, and change a phase angle of said AC control voltage to control and bring an output of said magneto generator close to a target value,

wherein said controller comprises:

control characteristic determination means that determines that a control characteristic, in which the output of said magneto generator
20 increases when the phase angle of said AC control voltage is changed to a delayed side relative to a present phase angle, and the output of said magneto generator decreases when the phase angle of said AC control voltage is changed to an advanced side relative to the present phase angle, is the normal control characteristic, and a control characteristic, in which the
25 output of said magneto generator decreases when the phase angle of said AC control voltage is changed to the delayed side relative to the present phase angle, and the output of said magneto generator increases when the phase angle of said AC control voltage is changed to the advanced side relative to

the present phase angle, is the reciprocal control characteristic, and determines whether the present control characteristic relative to the phase angle of said AC control voltage of the output of said magneto generator is said normal control characteristic or said reciprocal control characteristic;

5 phase angle decision means that changes the phase angle of said AC control voltage in a direction of bringing the output of said magneto generator close to the target value depending on a determination result of said control characteristic determination means to decide a new phase angle of said AC control voltage; and

10 inverter control means that controls said inverter so as to apply said AC control voltage having the phase angle decided by said phase angle decision means to said armature coil.

2. The generating device according to claim 1, wherein said generating
15 device further comprises a signal generating device of a magnetic flux change detection type having means for changing a magnetic flux when a rotational angle position of said magnet rotor matches a predetermined rotational angle position, and a coil that detects the change of said magnetic flux to generate pulses,

20 said controller further comprises control voltage zero point detection means that regards each zero point of said AC control voltage having the phase angle decided by said phase angle decision means as a target zero point, and detects each target zero point with reference to a timing at which said signal generating device generates a specific pulse, and

25 said inverter control means is comprised so as to control said inverter to apply an AC voltage having each zero point matching each target zero point detected by said control voltage zero point detection means to said armature coil from said voltage accumulation means.

3. The generating device according to claim 1, wherein said phase angle decision means is comprised so as: to change the phase angle of said AC control voltage to the delayed side relative to the present phase angle to
5 decide a new phase angle of said AC control voltage, when said control characteristic determination means determines that the present control characteristic is said normal control characteristic, and the output of said magneto generator is lower than the target value; to change the phase angle of said AC control voltage to the advanced side relative to the present phase
10 angle to decide a new phase angle of said AC control voltage, when said control characteristic determination means determines that the present control characteristic is said normal control characteristic, and the output of said magneto generator is higher than the target value; to change the phase angle of said AC control voltage to the advanced side relative to the present
15 phase angle to decide a new phase angle of said AC control voltage, when said control characteristic determination means determines that said control characteristic is the reciprocal control characteristic, and the output of said magneto generator is lower than the target value; and to change the phase angle of said AC control voltage to the delayed side relative to the present
20 phase angle to decide a new phase angle of said AC control voltage, when said control characteristic determination means determines that said control characteristic is the reciprocal control characteristic, and the output of said magneto generator is higher than the target value.

25 4. A generating device including a magneto generator comprising:
a magneto generator having a magnet rotor, and a stator having an m-phase armature coil (m is an integer equal to or more than 1) wound around an armature core with a magnetic pole portion facing a magnetic pole

of said magnet rotor;

an AC/DC conversion circuit having an AC/DC converter that converts an m-phase AC output voltage obtained from said magneto generator into a DC voltage to apply the DC voltage to voltage accumulation means, and an
5 inverter that converts a voltage across said voltage accumulation means into an m-phase AC voltage to apply the AC voltage to said armature coil; and

a controller that controls said inverter so as to apply an AC control voltage having the same frequency as an induced voltage of said armature coil to said armature coil from said voltage accumulation means via said
10 inverter, and change a phase angle of said AC control voltage to control and bring an output of said magneto generator close to a target value,

wherein said controller comprises:

phase angle decision means that changes the phase angle of said AC control voltage to a delayed side when the output of said magneto generator
15 is lower than the target value, and changes the phase angle of said AC control voltage to an advanced side when the output of said magneto generator is higher than the target value, to decide a new phase angle of said AC control voltage;

inverter control means that controls said inverter so as to apply said
20 AC control voltage having the phase angle decided by said phase angle decision means to said armature coil;

limit data map storage means that stores a limit data map providing a relationship between an advanced side limit value and a delayed side limit value within a normal phase angle changing range and a rotational speed of
25 said magnet rotor, said normal phase angle changing range being a changing range of the phase angle of said AC control voltage in which a relationship, such that when the phase angle of said AC control voltage is changed to the delayed side relative to the present phase angle, the output of said magneto

generator increases, and when the phase angle of said AC control voltage is changed to the advanced side relative to the present phase angle, the output of said magneto generator decreases, is met between a changing direction of the phase angle of said AC control voltage and a changing direction of the output of the magneto generator;

rotational speed detection means that detects a rotational speed of said magneto generator; and

limit data map search means that obtains an advanced side limit value and a delayed side limit value of a phase angle at a rotational speed detected by searching said limit data map for the rotational speed detected by said rotational speed detection means,

said phase angle decision means being comprised so as to decide a new phase angle of said AC control voltage only when the phase angle of said AC control voltage is between said advanced side limit value and said delayed side limit value.

5. The generating device according to claim 4, wherein said generating device further comprises a signal generating device of a magnetic flux change detection type having means for changing a magnetic flux when a rotational angle position of said magnet rotor matches a predetermined rotational angle position, and a coil that detects the change of said magnetic flux to generate pulses,

said controller further comprises control voltage zero point detection means that regards each zero point of said AC control voltage having the phase angle decided by said phase angle decision means as a target zero point, and detects each target zero point with reference to a timing at which said signal generating device generates a specific pulse, and

said inverter control means controls said inverter so as to apply an AC

voltage having each zero point matching each target zero point detected by said control voltage zero point detection means to said armature coil from said voltage accumulation means.

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